

Running Head: FIRE ESCAPE CODES

Executive Analysis of Fire Service Operations in Emergency Management

Fire Escape Codes
In Historic Buildings

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Abstract

In 1793, America's first textile mill was built in Pawtucket, Rhode Island. Within decades, over 100 other mills were constructed, making RI the birthplace of the Industrial Revolution. When manufacturing shifted in the 1940's, most mills became abandoned eyesores until RI passed its Historic Preservation Tax Credit. Developers then began converting factories into residential housing with residents relying on antiquated fire escapes.

The purpose of this descriptive research project was to correlate aging fire escapes with increased deaths and injuries from structural collapse. What federal guidelines govern fire escapes for historic properties? How do other states enforce fire escape safety? How effective is RI's code for fire escapes? Literature was reviewed, indicating a patchwork quilt of standards. Pawtucket, RI's code for fire escape safety needs clarification.

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Introduction

According to Richard Moe, President of the National Trust for Historic Preservation, more and more decaying urban areas all across America are turning to preservation as “a tool for creating great cities” (Moe, 2006). Until recently, however, developers have been reluctant to rehabilitate historic buildings because applying for building permits on existing structures has been time-consuming and expensive. After the creation of New Jersey’s 1998 Rehabilitation Sub Code, a 90 percent increase in the amount of rehabilitation occurred in the cities of Newark, Jersey City, Paterson, Elizabeth, and Trenton (Patella, 2000). According to Jane Kenny, commissioner of the New Jersey Department of Community Affairs, once New Jersey began promoting the reuse of historic properties, developers across the nation began seeing the rehabbing of older buildings as economically viable. In cities such Atlanta, Boston, Denver, Miami Beach, and Savannah, revitalizing old buildings has brought new economic life to previous urban decay (Moe, 2006). In general, preservationists and city planners embrace the conversion of historic properties into residential housing.

Rhode Island’s urban centers, particularly in the Blackstone River Valley, are now experiencing a wave of factory conversions. In Providence, a neglected mill built in 1892 was converted in 2005 to Westfield Lofts, providing 69 apartments for dozen of families (Davis, 2005). According to RI Senator Lincoln Chafee, the state’s historic tax credit plays a key role in making historic preservation and rehabilitation

happen (Davis, 2005). Areas enhanced by rehabbing old mills are restoring life to cities neglected for decades when industry moved away from RI.

When the factories in Pawtucket and the Blackstone Valley began closing their doors after World War II, urban blight descended on the area. A decade ago Pawtucket Mayor James E. Doyle described his city as “moribund” (Affordable Housing Institute [AHI], 2005, ¶7). When urban investor Ranne Warner studied the real estate potential of Pawtucket’s old mills, she noted that the common derogatory nickname for Pawtucket back then was “the Bucket”(AHI, 2005, ¶8). Despite Pawtucket’s near-death reputation, Warner purchased an abandoned 100,000-square foot factory in Pawtucket for \$550,000 and converted it to residential housing. Its high-end lofts now sell for approximately \$200 a square foot (AHI, 2005). According to Robert Billington, President of the Blackstone Valley Tourism Council, Warner’s Riverfront Lofts project is reinvigorating the once shabby downtown Pawtucket (Billington, 2006). In neighboring Woonsocket, the former Narragansett Knitting Mills is being converted into residential housing. In nearby Lincoln, a former cotton mill is now Highland Falls, a riverfront condominium with a long waiting list of buyers (Billington, 2006).

Thus, as developers in RI and other states utilize the new tax advantages in converting historic properties to residential housing complexes, and states like New Jersey alter codes for rehabilitating historic buildings, fire safety leaders must ascertain if changes in occupancy in converted historic buildings will parallel an increase in deaths and injuries from aging fire escapes. How does the federal government address the issue of fire escapes on historic structures? How do other

states legislate fire escape safety for existing buildings? How effective is Rhode Island's new fire code in terms of fire escapes?

Background and Significance

The significance of Rhode Island's industrial history dates back to the eighteenth century. In 1793, an English immigrant named Samuel Slater constructed the first water-powered textile mill in America on the banks of the Blackstone River in what is today Pawtucket, RI. Slater's success led other entrepreneurs to build hundreds of mills along the banks of the Blackstone River (National Park Service [NPS]). The agrarian landscape changed from fields and forests to mill villages, populated increasingly by factory workers and their families, and less by farmers.

In the 1800's when larger mills were built, immigrants flocked to the Blackstone Valley from all over the world. The first workers were Irish immigrants and then French Canadians. Other workers came from Poland, Sweden, and Portugal. Today's immigrants come from Central America and Cambodia (NPS). The early mill villages in RI grew into the cities of Pawtucket, Cumberland, Central Falls, and Woonsocket (Billington, 2006). With the waterpower of rivers and the influx of immigrant labor, entrepreneurs such as Charles Sisson and Oscar Steere became wealthy.

In 1883, Sisson and Steere founded Pawtucket's Hope Webbing Company, a small factory originally designed to manufacture bootstraps. From 1889 to 1895, the company grew from employing 15 workers to over 450. During World War I,

employment peaked at 1300 workers. By 1923, Hope Webbing was the world's largest manufacturer of narrow woven fabric (Zurier, 2006).

After World War II, the textile mills of the Blackstone Valley moved south for cheaper labor. The Hope Webbing factory and hundreds of other historic mills were neglected. Pawtucket and its neighboring cities of Woonsocket and Central Falls became urban eyesores.

In the early 1980's officials from the State of Rhode Island and the Commonwealth of Massachusetts petitioned the National Park Service to ascertain the historic significance of the Blackstone River Valley. In 1986, the Blackstone Valley National Heritage Corridor Act was signed into law, and the NPS recognized the Blackstone Valley as the Birthplace of the American Industrial Revolution (Billington, 2006). The Blackstone River Valley National Heritage Corridor, a 400,000-acre tract of land that includes cities, towns, villages, has a population of almost one million people (NPS). The NPS works with the states of RI and MA, dozens of cities, towns, nonprofit organizations, and private individuals to preserve and protect the value of the Blackstone Valley for future generations.

With the creation of the Blackstone River Valley National Heritage Corridor came federal funding of approximately \$21 million and private investments of \$73.5 million. Since the 1984 inception of the National Heritage Areas program, 22 other Heritage Areas have been created nationally with a federal investment of \$107,225,378 (Billington, 2006).

Historic preservation in RI has also been bolstered by the state's Historic Tax Credit legislation in effect since January 1, 2002 (Bank RI). Property owners of certified historic structures can receive a 30% tax credit for substantially rehabilitating such buildings. The Standards for historic certification are set by the Secretary of the U.S. Department of the Interior; historic designations are certified by the Rhode Island Historical Preservation & Heritage Commission (RIHPHC).

RI's tax credits for the rehab of historic buildings have spurred the development of 189 projects, representing \$859 million in private investments. Predictions are that the \$257 million in tax credits between 2003 and 2011 will generate approximately \$444 million in income, sales, and property taxes within the State of Rhode Island. Additionally these projects fueled by historic preservation tax credits will provide over 3,000 housing units, 20% of which for low or moderate-income residents (Moe, 2006).

Other projects being planned to take advantage of the 30% tax credit for historic preservation are the Peerless Building in Downtown Providence, the Ashton Mill in Cumberland, the Lebanon Mill in Pawtucket, and the Rising Sun Mills in Olneyville (Grow Smart RI, 2004). These historic properties will be converted into housing, providing homes for almost 400 Rhode Islanders.

In December of 2005, The Rhode Island Historic Preservation and Heritage Commission approved the addition of Pawtucket's Hope Webbing Company to the National Register of Historic Places (RIHPHC, 2005). As a result, investors in Hope Webbing are beginning a \$32 million project to convert the old brick mill into residential housing, artists' studios, and commercial uses (Zurier, 2006).

According to a study conducted by the firm of Lipman, Frizzell, and Mitchell of Maryland, for every dollar RI has invested in tax credit projects, those projects have returned more than five dollars during the construction phase alone (Grow Smart RI, 2004).

Given RI's historic significance and its abundant inventory of abandoned factories, developers interested in converting existing structures have taken advantage of Rhode Island's tax credits for historic preservation. Until two years ago, however, traditional building codes for recycling these neglected structures had discouraged investors. With the passage of RI's new rehab code, the economic barriers to mill conversion were lifted. Because the new rehab codes offer more flexibility, fire safety officials must respond in a timely manner to the emerging issue of how flexible new codes might compromise fire safety.

My descriptive research project will investigate guidelines for the fire escapes of historic buildings. What are the federal guidelines? What codes prevail in other states pertaining to historic buildings? How effective is RI's new fire code in the area of historic buildings? Although fire escape safety represents just one detail in any given code's standards, that one overlooked or vaguely written detail could become a state fire marshal's worst nightmare, particularly in a state as small and intimate as Rhode Island. A literature search will provide a historic overview of fire codes on the national, state, and local levels.

Literature Review

The earliest building codes, dating back to the Code of Hammurabi in ancient Babylon, were designed to prevent buildings from collapsing due to poor engineering. After such disasters as the Chicago Fire of 1871, the San Francisco Earthquake and Fire of 1906, and the Triangle Shirtwaist Fire of 1911, public policy changed; codes became more rigorous in preventing deaths and injuries in fire emergencies (Mattera, 2006). Before the advent of skyscrapers with interior fire stairways, most multi-story new construction projects were required to include external fire escapes (Wikipedia, Fire Escape)

On March 25, 1911, 146 workers died in the Triangle Shirtwaist Company Fire in lower Manhattan, New York. That Saturday afternoon about 500 employees, mostly young immigrant women, were at work when an explosion occurred, and smoke began coming out of the eighth floor windows. One fire escape buckled under the weight of workers trying to escape flames and smoke. Some girls jumped to their deaths. Public outrage led to fire-prevention legislation (Lyons, 1999).

On December 7, 1946, 119 guests, mostly teenagers, died in the 15 story Winecoff Hotel in downtown Atlanta, Georgia. The fire started on the third floor and blazed for over two hours. Many guests jumped to their deaths. The hotel lacked fire escapes, fire doors, and automatic sprinklers. Within days of the fire, fire codes across the nation were upgraded. In 1948, Georgia adopted the Building Exits Code (Szymanski, 2000).

On February 20, 2003, the Station Nightclub Fire in West Warwick, RI led to the deaths of 100 patrons, most of whom were young people. Flammable foam and overcrowding prevented the club patrons from escaping the smoke and fumes. As a result of this tragedy, the RI General Assembly passed one of the most “draconian” fire codes in the nation (*Providence Sunday Journal* editorial, May 14, 2006, p. D6).

Like the victims of the Triangle Shirtwaist Factory Fire, the Winecoff Hotel Fire, and the Station Nightclub Fire, fire escapes in general have had a somewhat short life span. According to John H. Lienhard of the University of Houston’s College of Engineering, many mid-nineteenth century buildings were not originally built for fire safety. It wasn’t until after tragic fires fueled public outcry that states began passing legislation regarding fire escapes, fire exits, and fire safety in general. Today’s new multi-story buildings are constructed with insulated stairwells protected by fire doors. Fire escapes have become artifacts, found only in America’s older cities (Lienhard, 2003). Although once a very important part of fire safety, fire escapes today have fallen out of common use and are rarely a part of new construction (Wikipedia, Fire Escape).

In 1968, New York City banned all exterior fire escapes for new building projects because insulated interior stairwells were considered safer. Fire escapes fell out of favor because of burglaries and obstructed views. According to Vincent J. Dunn, a retired Deputy Chief with New York City’s Fire Department, only about 200,000 fire escapes remain in that city (Chen, 2004).

Dunn notes that many of today’s older fire escapes are rusted and corroded. Concerned about the safety of residents in these older buildings as well as the safety of

firefighters who use fire escapes to rescue victims, Dunn makes the point that the reality of most aging fire escapes contrasts sharply to the newly constructed fire escapes used at today's fire training centers (Dunn, 2004). Because of age and poor maintenance, fire escapes are susceptible to rust, corrosion, and collapse.

The safest type of fire escape is the exterior screened staircase wide enough for two people to descend directly to the street below with no drop ladder. The safest fire escape, however, can be hazardous without proper maintenance. In New York City, one firefighter was permanently disabled while using an exterior screened stairway. More firefighters are injured by fire escape collapses than building residents (Dunn, 2004)

A second type of fire escape is the party balcony stairway which has no access to the street below. The greatest hazard of the party balcony is collapse from overload, in both older and newer buildings (Dunn, 2004). The worst tragedy of a party balcony fire escape occurred on July 22, 1975 in Boston, Massachusetts in a tenement fire on Marlborough Street. A stranded young woman named Diana Bryant and her godchild Tiare Jones were about to be rescued when the fire escape suddenly collapsed, plunging Bryant to her death. A photo of that fatal plunge taken by Stanley Forman won the Pulitzer Prize (Turner Network Television [TNT], 2000). As a result of that photo, first published in the *Boston Herald*, officials in Boston strengthened their laws regarding fire escape safety (British Broadcasting Corporation [BBC], 2005). As with the Triangle Shirtwaist Factory Fire, the Winecoff Hotel Fire, and the Station Nightclub Fire, stringent fire codes followed as a direct result of the public outcry over each tragedy.

No such epic tragedies have occurred with collapsing fire escapes. Recently, however, on June 13, 2006, William Koonce, a 55 year-old ironworker, was conducting routine maintenance on a fire escape of a Chicago high-rise when the fire escape detached from the building. Koonce fell seven stories to his death. The U.S. Occupational Health and Safety Administration (OSHA) is currently investigating this accident (Blake, 2006).

Despite the fact that fire escapes are either banned or no longer mandated in new construction, they do continue to exist as secondary emergency exits in historic properties. Lucrative tax credits for rehabbing historic properties will continue to lure developers as will new state rehab codes, in RI and in any other states with an abundance of historic buildings. In light of this new real estate trend, how does the federal government treat fire escapes in historic properties? For the future safety of occupants seeking egress, fire fighters rescuing victims, and engineers and ironworkers inspecting fire escapes in older buildings, what federal guidelines exist for fire escapes in rehabilitated historic properties?

The responsibility for establishing the NPS Standards in using tax credits for the rehabilitation of historic buildings rests federally with the Secretary of the Department of the Interior. According to the NPS, rehabilitation is defined as “the process of returning a property to a state of unity, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural and cultural values”(NPS, ¶ 2). These federal Standards (Department of Interior regulations 36 CFR 67) assume that some repair or alteration must occur for any historic building to

be used in the 21st century. Although the NPS Standards are not mandatory codes, they must be followed if a developer chooses to utilize the tax credit benefit. The federal Standards do not specifically address fire escapes, except to list them as expenses eligible to receive tax credit (Incentives, NPS). In general, the NPS Standards promote minimum changes to historic buildings and avoiding the removal of historic materials; deteriorated features shall be repaired rather than replaced (Standards, NPS).

In terms of the safety of occupants, firefighters, and engineers, the NPS Standards state that “It is often necessary to look beyond the ‘letter’ of code requirements to their underlying purpose; most modern codes allow for alternative approaches and reasonable variance to achieve compliance”(Health & Safety, NPS, ¶ 2). The NPS adds that preventive and maintenance routines be developed (Health & Safety, NPS, ¶ 3), but NPS does not clarify who should develop the maintenance routines: the property owner, the local fire marshal, the state fire marshal, or a private engineering consultant.

The NPS Standards for historic buildings are not mandatory, unless developers want their properties to be certified as historic so that they can take advantage of the ensuing tax credits. In a sense the NPS federal standards are model building codes, codes having no legal status unless they are legally adopted by a state or a municipality (Wikipedia/Building-codes).

National model building codes have historically been developed by the insurance industry. Concerned about inadequate or non-uniform local codes, groups such as the National Fire Protection Association (NFPA) formed in the late 19th

century to promote building standards and reduce payouts when buildings collapsed or burned (Mattera, 2006). The most widely accepted model code was called the National Building Code, developed by the National Board of Fire Underwriters.

Other model code groups emerged regionally: in 1927, the Uniform Building Code (UBC) developed its code, and that dominated West Coast construction for decades; the UBC later became the International Conference on Building Officials (ICBO). In 1945, the Southern Standard Building Code Congress International (SBCCI) introduced its code. In 1950, the Building Officials Conference of America (BOCA) introduced its Basic Building Code for the Midwest and the Northeast. For decades, most states followed the model codes of their respective regions, with local municipalities often adopting their own amendments (Texas Historical Commission). In 1994, the three model code groups (the ICBO, the SBCCI, and the BOCA) combined to form the International Code Council (ICC) with a single set of model codes called the I-Codes. The NFPA also has its own model building codes; many states follow the NFPA codes in conjunction with the I-Codes (Mattera, 2006).

All of these traditional model codes focused on new construction. New construction projects today seldom include fire escapes. For decades, investors could not make a profit in rehabilitating historic properties. Since historic properties were not being converted into residential housing, the entire issue of fire escape safety was not a major issue. The two major hurdles which had curbed developers from rehabilitating historic properties were the 25-50% rule and the change-of-occupancy rule.

According to the traditional model codes, if the total estimated cost of rehabbing an existing building exceeded 50 percent of the cost to replace the building, that developer would have to follow the legal building code for new construction as mandated by his or her municipality or state. Additionally, any change in occupancy required that current codes for new construction would have to be followed (Mattera, 2006). For years, developers shied away from converting old mills into residential housing because under traditional regional codes, or I-Codes, a change in occupancy triggered the strict application of the traditional mandatory codes for new construction. The change-of-occupancy rule gave too much discretion to local building inspectors (Galvin, 2006). Because most rehab projects were previously subjected to the strict standards of new construction, builders were deterred from rehabbing or converting historic structures (Galvin, 2006).

The first state code specifically aimed at encouraging the rehabilitation of existing properties was enacted in New Jersey in 1997 with its mandatory Rehabilitation Subcode (Galvin, 2006). To varying degrees, Maryland, Pennsylvania, Michigan, Florida, North Carolina, and RI all followed New Jersey's lead in enacting what are referred to as "smart codes." Also in 1997, the Federal Department of Housing and Urban Development (HUD) developed its model rehab code. In 2000, the ICC also developed its rehab code: the International Existing Building Code (IEBO) (Galvin, 2006).

Unlike New Jersey's mandatory statewide rehab code, Maryland's rehab code leaves its enactment to the various local cities and towns. Local code officials have allowed some developers and architects to believe mistakenly that they must follow

traditional building codes. Pennsylvania's 1999 rehab code has also been enforced incoherently (Galvan, 2006).

Like New Jersey, RI is one of a few states with mandatory statewide building codes (Mattera, 2006). RI's new rehab code, adopted in 2002, was statewide, but voluntary. Owners of existing properties could abide by *either* the traditional code or the new rehab code (Mattera, 2006). According to Scott Wolf, Executive Director of Grow Smart Rhode Island, some local fire marshals and building inspectors have discouraged property owners from choosing to follow the new rehab codes (Mattera, 2006). Developers of historic properties claim that some local officials are advising developers not to use the new rehab code (Grow Smart RI, 2006).

Rhode Island's new rehab code was further compounded by its strict new fire code, following the February 2003 Station Nightclub Fire in which 100 people died. The new 2004 RI fire code gave more power to local fire marshals, some of whom have been resistant to the 2002 RI rehab code (Matteo, 2006).

Tom Coffey, executive director of the RI Fire Safety Code Board, sees potential conflicts for state and local fire marshals in RI. RI's 2006 fire safety code, one of the strictest in the nation, is modeled after the NFPA 101 Life Safety Code. RI's 2002 Building Rehab Code, however, is modeled after New Jersey's rehab code (Grow Smart RI, 2006).

In conclusion, federal NPS fire escape codes for certified historic buildings are vague: details such as inspection schedules and penalties for non-compliance do not exist. Furthermore, the NPS Standards are only model guidelines for developers

aiming at tax credits. On the state level, mandatory codes with fire escape rules vary from state to state and city to city.

Fire escapes are minimally addressed in the State of Arkansas: the State Fire Marshall is responsible for overseeing the construction and maintenance of fire escapes. His or her authority is based on Act 254 of 1955 (Arkansas State Police [ASP]).

In the City of Guelph, California, By-law Number (2000)-16454 simply states that any fire escape that is broken, warped, loose, rotted or deteriorated shall be repaired or replaced (Guelph, By-laws, 2000). This by-law does not detail who determines whether a given fire escape needs repair or replacement; failures to comply are not addressed.

Detailed ordinances about fire escapes occur usually as local amendments to model state codes. For example, Portland, Oregon amended its Fire Escape Maintenance Standards in 2002 to allow its Fire Marshal to require an engineer's report to show that a given fire escape complies with four standards: the ability to support 100 pounds per square foot or 300 pounds placed anywhere; railings to support a force of at least 50 pounds per linear foot or a 200 pound concentrated load; firefighters' ladders must withstand a horizontal force of 200 pounds placed anywhere; test loads shall be twice that of working loads. The inspection must be done by a structural engineer licensed in Oregon or an approved testing agency under the direction of a licensed engineer (Fire Escape Maintenance Standards, 2002, Portlandonline.com).

If an area of a fire escape is identified as suspect, the engineer/inspector will indicate such area with contrasting paint to help locate areas to be repaired. Any fire escape with support problems will be tagged immediately with an “UNSAFE” sign or marked with an 18” piece of surveyor’s tape tied to a lower rung. After a property owner repairs a fire escape, it must be inspected again before any painting. Failure to comply with Portland’s fire escape ordinances includes fees for each re-inspection and Code Hearings until the fire escape is repaired according to the four standards (Fire Escape Prevention, Testing & Repair, 2002, Portlandonline.com).

Unlike Portland’s code which details fire escape inspections, Rhode Island’s Code for Fire Protection of Historic Structures follows the National Fire Protection Association (NFPA) 914 (NFPA, 2001). Its Appendix H follows the Standards of the Secretary of the Interior, which mention several times that historic structures must be restored as closely to the original architecture as possible; the NPS Standards do not address fire escape safety. Furthermore, the Standards are not mandatory, unless a developer is utilizing historic tax credits.

The RI Rehabilitation Building and Fire Code for Existing Buildings and Structures is similarly vague. When an existing building has a change in occupancy, from a mill to residential housing, for example, existing fire escapes must comply with the egress requirements of the NFPA 101 Life Safety Code (Rehabilitation Building and Fire Code, Rhode Island, 2002). Unlike the Portland Code, the NFPA 101 does not detail the standards for fire escapes. Without penalties, such as fees for re-inspections, property owners could ignore their aging fire escapes. In RI with its abundance of historic mills being converted to apartments and condominiums, the

issue of fire escape safety needs to be examined more closely. As mill conversions become more popular, residents of those historic properties need to be protected when using fire escapes during emergencies. Fire fighters also have a vested interest in the safety of aging fire escapes when they must rescue residents during emergencies.

Procedures

To conduct this descriptive research project, I conducted numerous internet searches. The NFPA and USFA websites did not address the issue of fire escapes per se; instead those sites described fire escape plans and their importance. Another limitation was that current data on deaths and injuries from defective fire escapes could not be found. If there were, for example, any deaths from collapsing fire escapes, those data were included in the more general category of deaths due to building collapse.

Results

Other than the deaths of a Boston woman in 1975 and a Chicago ironworker in 2006, no data suggest that collapsing fire escapes are causing significant numbers of injuries or deaths to residents or firefighters during fire emergencies. On the federal level, fire escapes are a non-issue. Since exterior fire escapes are no longer being used in new construction, only historic buildings have existing exterior fire escapes. The

NPS national Standards stress the importance of historic preservation. Architectural details abound; fire escape safety details are scarce on the national level. The NFPA 101 Life Safety Code is also vague. The phrase “fire escape” is not listed in its index.

On the state level, details concerning fire escapes by and large do not exist. Some municipalities, such as Portland Oregon, have enacted detailed fire escape legislation. Since 2002, Portland has required that fire escapes comply with four weight-bearing standards. In Portland, fire escapes must be inspected by structural engineers certified by the State of Oregon. Non-complying property owners are subject to re-inspection fees again and again and again until they finally bring their fire escapes up to code or face a hearing.

In RI, code details concerning fire escapes lack the specificity of the code in Portland Oregon. In RI, developers who convert historic mills into residential housing may follow the traditional NFPA Life Safety 101 code or RI’s 2002 rehab code. Neither the traditional code nor the 2002 rehab code is as stringent as the fire escape code for Portland Oregon.

Discussion

Despite the fact that deaths and injuries from aging fire escapes are not occurring at this point in time, clearly more Rhode Islanders are occupying buildings constructed in the 19th century when exterior fire escapes were the norm. For decades these abandoned mills were neglected eyesores that no one wanted. With the passage

of RI's Historic Tax Credit and RI's 2002 rehab code, developers saw profit potential in converting old mills to residential housing. As hundreds more Rhode Islanders choose to live in these converted historic structures, fire safety officials need to anticipate the repercussions of residents' using antique fire escapes during fire emergencies.

No one anticipated the Chicago Fire of 1871, the San Francisco Earthquake and Fire of 1906, the Triangle Shirtwaist Factory Fire of 1911, the Winecoff Hotel Fire of 1946, or the Station Nightclub Fire of 2003. Yet all of these tragedies brought about upgraded fire safety codes.

Today's fire safety codes generally ignore the issue of fire escapes. The federal government has much more advice about how to clean metals on historic structures (delicately) than how to assure that metal structures are safe. Details about fire escape inspections on the state levels are vague and written in the passive voice. Clearly fire escapes should be inspected, but by whom: state fire marshals, municipal fire marshals, ironworkers, certified structural engineers, or property owners themselves?

Simply because exterior fire escapes seem like a vestige from the past, like railroad depots and lighthouses, does not mean that their usefulness is over. As long as the trend in Rhode Island real estate to convert historic mills into housing continues, current and future residents of those converted mills will assume that their building's fire escapes are safe and secure in the event of a fire emergency.

The pendulum in public policy seems to have swung away from stringent fire codes for all structures, new and existing, to the current promotion of "smart codes."

The very phrase “smart codes” suggests a mindset that any other guidelines are “stupid codes.” However, when “smart codes” prevail and local fire officials are correspondingly flexible in their interpretations, those officials or the cities they represent are possibly assuming some liability when fire emergencies occur.

Given RI’s large inventory of historic mills, its generous tax credits for rehabilitating historic buildings, and its flexible new rehab code, the pressure on local fire officials to interpret fire codes flexibly will continue to mount. If the historic values of preservationists and the economic values of developers outweigh the traditional values of fire code officials, the public is at risk during fire emergencies. Also at risk are the lives of firefighters who may add collapsing fire escapes to their list of on-the-job hazards.

Fire escapes are tangible symbols of the past. Their safety needs to be assured in clear terminology to both historic preservationists and fire safety officials.

Recommendations

1. The NFPA and the USFA must distinguish in its websites between “fire escapes” and “fire escape plans.”
2. The State of Rhode Island Fire Marshal’s Office should pro-actively survey each municipality in RI to determine who inspects local fire escapes, how often, and how defective fire escapes are monitored for repair work.
3. The Pawtucket Fire Department should amend its fire code to include specific fire escape standards for new and existing buildings: stress tests should be

conducted by a structural engineer licensed by the State of Rhode Island. Every fire escape in the City of Pawtucket should have an inspection schedule.

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